

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

KAWAN, Joseph C.

Group Art Unit: 3624

Serial No.: 09/238,995

Examiner: Akers, Geoffrey R.

Filed: January 28, 1999

For: **METHOD AND SYSTEM OF CONTACTLESS INTERFACING FOR SMART
CARD BANKING**

APPEAL BRIEF

Commissioner of Patents
Mail Stop Appeal Brief-Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief under 37 C.F.R. § 1.192 in connection with the decision of the Examiner mailed on October 29, 2002. Each of the topics required by Rule 192 is presented herewith and is labeled appropriately.

(1) Real Party In Interest

The real party in interest is Citicorp Development Center, Inc.

(2) Related Appeals And Interferences

There are no other appeals or interferences related to this case.

(3) Status Of Claims

Claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 are pending.

No claims have been allowed.

Claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 are hereby appealed.

(4) Status Of Amendments

There are no amendments after final rejection.

(5) Summary Of The Invention

The invention involves a method and system of smart card banking using a contactless interface to establish a communications link for bi-directional data flow between the smart card and a financial institution banking system. The smart card is a credit card-sized plastic card with a microcomputer having memory to set up and securely store data. A personal data assistant (PDA) provides a physical interface with the smart card in order to exchange information and perform transactions. The PDA includes an electronic purse or wallet or other alphanumeric input/output and display device capable of providing a conduit between the smart card and the bank's system via, e.g., an ATM and includes a contactless communications interface for input and output of data. See, e.g., p. 5, lines 2-20. The PDA also includes a smart card reader for communicating with the smart card by inserting the smart card into the smart card reader (See, e.g., p. 6, lines 3-11) and communicating with the ATM through the contactless communications interface. See, e.g., p. 6, lines 21-28.

When contactless communication is initiated between an application residing on the smart card microcomputer and the on-line system of the financial institution, the system verifies authorization for the communication, and once the authorization is verified, information can be communicated for the user to the on-line system. The contactless communication is accomplished via the contactless communication interface, such as infrared, wireless or radio frequency communication, including, e.g., a proximity communication interface. See, e.g., p. 2, lines 11-22. The contactless communication can be initiated at a terminal, such as an ATM, a PC, or a

land or wireless phone, through a contactless transceiver of the terminal, such as an infrared or a wireless or radio frequency transceiver, including, e.g., a proximity transceiver. Such contactless communication is initiated between the transceiver of the terminal and a contactless transceiver of the PDA. However, a physical contact communication is initiated between the smart card and the PDA with the card reader. See, e.g., p. 2, line 24-p. 3, line 13.

Authorization is verified by one or both of the PDA and the terminal and involves verifying the authenticity of the smart card and checking security information for the user, such as the user's PIN number or biometric information, such as the user's fingerprint. The security information is received by the system through the input/output device of the PDA or the terminal, and once the authorization is verified, information can then be communicated to the on-line system, likewise by inputting the information through the input/output device of the PDA or the terminal. See, e.g., p. 3, lines 14-25.

The invention allows a smart card user to access the smart card application by establishing the physical contact communication interface with the smart card by inserting the smart card into the hand-held computing device, such as the PDA that also functions as a card reader. See, e.g., p. 3, lines 3-7. The user can then enter identification and transaction information on the hand-held computing device before going to the self-service transaction terminal, such as an ATM, to perform a transaction. Thus, the user can set up a smart card transaction, such as withdrawing cash, checking account balances, or checking a stock portfolio, on the hand-held computing device in advance before going to the self-service transaction terminal and avoid the necessity of navigating through a series of ATM screens to perform the transaction. See, e.g., p. 8, line 24-p. 9, line 12.

After inserting the smart card and entering the identification and transaction information on the hand-held device, the user can take the hand-held computing device and smart card to the self-service transaction terminal and initiate the contactless interface via the hand-held device between the smart card application on the smart card and the self-service transaction terminal using, e.g., some or all of the

IR emitter/sensors of the ATM touch screen and IR emitter/sensors provided on the hand-held device. The on-line system verifies the smart card based on the identifying information entered by the user on the hand-held computing device, and the transaction information entered by the user on the hand-held computing device is communicated to the on-line system via the contactless communication interface. See, e.g., p. 9, line 13-p. 10, line 14.

(6) Issues

a) Whether the Examiner's rejection of claims 1, 4, 5, 8, 10, 15-17, 22, 27, 33, 39, 42-50, 55-58, 63, 69, 71, 73-74, and 79-81 under 35 U.S.C. § 103(a) as being unpatentable over Fox (U.S. Patent No. 5,943,624) in view of Claus (U.S. Patent No. 5,461,217) in view of Jachimowicz (U.S. Patent No. 5,789,733) and in further view of Saitoh (U.S. Patent No. 5,929,414) is proper.

b) Whether the Examiner's rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Fox (U.S. Patent No. 5,943,624) in view of Claus (U.S. Patent No. 5,461,217) in view of Jachimowicz (U.S. Patent No. 5,789,733) and in further view of Pitroda (U.S. Patent No. 5,590,038) is proper.

c) Whether the Examiner's rejection of claim 66 under 35 U.S.C. § 103(a) as being unpatentable over Fox (U.S. Patent No. 5,943,624) in view of Claus (U.S. Patent No. 5,461,217) and in further view of Saitoh (U.S. Patent No. 5,929,414) is proper.

d) Whether the Examiner's rejection of claims 2-3, 11-12, 14, and 64-65 under 35 U.S.C. 103(a) as being unpatentable over Fox (U.S. Patent No. 5,943,624) in view of Claus (U.S. Patent No. 5,461,217) and in further view of Jachimowicz (U.S. Patent No. 5,789,733) is proper.

e) Whether the Examiner's rejection of claim 70, 72 under 35 U.S.C. 103(a) as being unpatentable over Fox (U.S. Patent No. 5,943,624) in view of Claus (U.S. Patent No. 5,461,217) and in further view of Pitroda (U.S. Patent No. 5,590,038) is proper.

(7) Grouping of Claims

Claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 are arranged into the groups listed below. Claims within a group stand and fall together.

Groups of claims, however, do not stand or fall together with other groups of claims.

GROUP	CLAIMS
I	1 and 63
II	2, 3, 11, 64 and 65
III	4, 5, 8, 10, 15, 16, 17, 22, 27 45, 46, 50, 69, 71, and 73
IV	12 and 14
V	13
VI	33, 39, 42, 43, 44, 55, 56, 57, 58, 74, 79, 80, and 81
VII	66
VIII	70 and 72

(8) Argument

The Combination of Fox, Jachimowicz, Claus, and Saitoh to Reject Claims 1, 4, 5, 8, 10, 15-17, 22, 27, 33, 39, 42-50, 55-58, 63, 69, 71, 73-74, and 79-81 Is Improper

Specifically, independent method claim 1 and independent system claim 63 propose a method and system for contactless interface for a smart card, in which a physical contact bi-directional communication interface is established between the smart card and a hand-held computing device for accessing a smart card application on a microcomputer of the smart card, and thereafter identifying information and transaction information is entered on the hand-held computing device. Claims 1 and 63, respectively, propose further that the contactless bi-directional communication interface via the hand-held computing device is thereafter initiated between the smart card application and a self-service transaction terminal of an on-line system of a financial institution, that the smart card is verified by the on-line system based at least partly on identifying information that is received by the on-line system via the contactless communication interface, and that transaction information entered by the user on the hand-held computing device is transmitted to the self-service transaction terminal of the on-line system via the contactless communication interface.

With regard to independent claim 1, the Examiner considers that Fox discloses all of the claimed elements except 1) allowing the user to enter identifying information on the device to initiate the contactless interface, which the Examiner considers to be taught by Jachimowicz; 2) on-line communication, which the Examiner considers to be taught by Claus; and 3) a contact/no-contact communication for accessing the smart card, which the Examiner considers to be taught by Saitoh. With regard to independent claim 63, the Examiner considers that Fox discloses all of the claimed elements except 1) a contactless system, which the Examiner considers to be taught by Jachimowicz; 2) on-line communication between smart cards, which the Examiner considers to be taught by Claus; and 3) a

contact/no-contact communication for accessing the smart card, which the Examiner considers to be taught by Saitoh.

It is respectfully submitted that Fox, Claus, Jachimowicz, and/or Saitoh do not disclose or suggest Applicant's claimed method and system for contactless interface for a smart card either separately or in combination with one another. On the contrary, the Fox patent discloses a cell phone that includes smart card circuitry in addition to the cell phone circuitry and an RF interface. See, e.g., col. 5, lines 13-25. Fox focuses on eliminating the use of smart cards because of various problems said to be associated with smart cards and instead advocates incorporating the electronics associated with the smart card into the cell phone housing to overcome the perceived problems and disadvantages of smart cards. See, e.g., col. 1, lines 31-52. Fox is absolutely devoid of any showing of a physical interface between a smart card and a hand-held computing device, much less a physical contact bi-directional communication interface between the smart card and the hand-held computing device for accessing a smart card application on the smart card microcomputer according to Applicant's claimed invention.

As noted, Fox does not even employ a smart card but instead incorporates smart card type circuitry within the cell phone housing (See, e.g., col. 1, lines 46-49) and discourages use of smart cards. See, e.g., col. 1, lines 40-45. Further, there is not even a way to insert or otherwise physically interface a smart card with Fox's cell phone. See, e.g., Abstract and Fig. 1. Maintaining a physically distinct smart card, as proposed in Applicant's claimed invention, provides many advantages over Fox, and Fox provides none of the flexibility of Applicant's claimed invention. For example, numerous devices may be utilized to provide contactless communication for a single smart card, and numerous smart cards can utilize a single device to perform the contactless communication.

Jachimowicz does not cure the deficiencies of Fox. It is true that Jachimowicz discloses a smart card with an optical sensor and light source for transmission of

information. See, e.g., col. 2, lines 45-53. However, Fig. 2 of Jachimowicz showing a cross-section of the card clearly illustrates that the optical communications components are internally disposed, and that Jachimowicz does not teach or suggest contactless communication via a handheld computing device or entering information on the computing device according to Applicant's claimed invention.

Nor does Claus cure the deficiencies of Fox and Jachimowicz. It is true that Claus discloses communication between smart cards. See, e.g., col.2, line 34. However, Claus does not teach or suggest contactless communication for a user between the smart card application and an on-line system as contemplated by Applicant's claimed invention. Rather, Claus requires at least two smart card readers that are linked in a smart card reader network. See, e.g., col. 4, line 24. While Claus teaches a method of enhancing the administration of smart cards through intercard communication, Claus neither teaches nor suggests establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

Neither does Saitoh cure the deficiencies of Fox, Jachimowicz, and Claus. It is likewise true that Saitoh discloses a smart card that can be used with a smart card reader with or without contacts. See, e.g., col. 3, line 46-col. 4, line 8. However, Saitoh neither teaches nor suggests establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application via the hand-held device and an on-line system according to Applicant's claimed invention.

To establish a *prima facie* case for obviousness under 35 U.S.C. § 103 (a), an Examiner must meet three basic criteria. "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success.

Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” Manual of Patent Examining Procedure § 2143. “In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification.” In re Linter, 173 USPQ 560, 562, 458 F.2d 1013, 1016 (CCPA 1972).

It is respectfully submitted that a person of ordinary skill in the art would not be led or motivated to modify the disclosures in the cited references in order to reach applicants’ claimed invention. For example, combining the smart cards of Jachimowicz, Claus, and Saitoh with the cell phone of Fox, which is patently not capable of receiving a smart card, would destroy Fox and vice versa. Applicant respectfully submits that the Examiner is allowing hindsight from Applicant’s own disclosure to selectively ignore certain prior art teachings. For at least these reasons Applicant respectfully submits that only through hindsight does the Examiner attempt to justify the selective combination of the references in an effort to render the invention obvious. It is only the Applicant’s disclosure that sets forth the features as claimed.

Therefore, Fox, Jachimowicz, Claus, and/or Saitoh do not disclose, nor even suggest, the required combination of limitations of claims 1 and 63 of Applicant’s claimed method and system for contactless interface for a smart card according to Applicant’s claimed invention. The claimed combinations are not taught or suggested by Fox, Jachimowicz, Claus, and/or Saitoh either separately or in combination with one another. Because the cited references, either alone or in combination, do not teach the limitations of independent claims 1 or 63, the Examiner has failed to establish the required *prima facie* case of unpatentability. See In re Royka, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a *prima facie* case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

The Examiner has failed to establish the required *prima facie* case of unpatentability for independent claims 1 or 63 and similarly has failed to establish a *prima facie* case of unpatentability for claims 4, 5, 8, 10, 15-17, 22, 27, 33, 39, 42-50, 55-58, and 79-81 that depend on claim 1 and claims 69, 71, and 73-74 that depend on claim 63 and which recite further specific elements that have no reasonable correspondence with the references.

For example, claims 4, 5, and 8 depending on claim 1 further propose initiating the contactless bi-directional communication interface between the smart card application and the self-service transaction terminal via a wireless communication interface, such as a radio frequency or proximity communication interface and that the self-service terminal can be a bank terminal, and claims 69 and 71 depending on claim 63 propose that the self-service terminal can be an on-line ATM or telephone. Claims 10, 15, 16, 17, 22, and 27 depending on claim 1 and claim 73 depending on claim 63 propose further that the contactless bi-directional communication interface is initiated through a contactless communication transceiver, wireless transceiver, radio frequency transceiver or proximity transceiver, that the self-service transaction terminal can be a wireless phone, and that the hand-held computing device can be a PDA. Claims 45, 46, and 50 depending on claim 1 propose further that the process of verifying the smart card involves verifying the authenticity of the smart card by receiving and checking security information, such as a PIN number or biometric information, received for the user via the contactless communication interface between the hand-held device and the self-service terminal.

The Examiner considers that all of the further specific elements recited in claims 4, 5, 8, 10, 15, 16, 17, 22, 27 45, 46, 50, 69, 71, and 73 are disclosed in Fox. On the contrary, Fox neither teaches nor suggests a contactless bi-directional communication interface for the smart card according the Applicant's claimed invention. As previously noted, Fox does not even employ a smart card but instead uses a cell phone that incorporates smart card type circuitry within the cell phone housing, and Fox actually discourages the use of smart cards. Further, there is no way

to insert or otherwise physically interface a smart card with Fox's cell phone. Fox is absolutely devoid of any showing of a physical interface between a smart card and a hand-held computing device, much less a physical contact bi-directional communication interface between the smart card and the hand-held computing device for accessing a smart card application on smart card microcomputer according to Applicant's claimed invention.

These combinations of references do not recite or render obvious each and every limitation of claims 4, 5, 8, 10, 15, 16, 17, 22, 27, 45, 46, 50, 69, 71, and 73. See In re Royka, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a prima facie case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

For another example, claim 33, 39, 42, 43, 44, 55, 56, 57, and 58 depending on claim 1 and claim 74 depending on claim 63 proposes further that the hand-held computing device can be a PDA which can be provided with an electronic purse or wallet and that the process of verifying the smart card by the on-line system involves receiving and checking security information received for the user via the PDA or via an input/output device of the terminal. Claims 79, 80, and 81 depending on claim 1 propose further that the process of accessing of the smart card application involves executing the smart card application and/or loading the smart card application and that the processes of contactless communication, authorization verification and communication of the information are iterative.

The Examiner considers that all of the further specific elements recited in claims 33, 39, 42, 43, 44, 55, 56, 57, 58, 74, 79, 80, and 81 are disclosed in Fox, Claus, Jachimowicz, and Saitoh. However, neither Fox which discloses a cell phone with smart card circuitry, Jachimowicz which discloses a smart card with internally disposed optical communications components, Claus which discloses a smart card reader network, nor Saitoh which discloses a smart card for use with a smart card reader with or without contacts recite the required combination of limitations

proposing establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

These combinations of references do not recite or render obvious each and every limitation of claims 33, 39, 42, 43, 44, 55, 56, 57, 58, 74, 79, 80, and 81 See In re Royka, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a prima facie case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

For at least the foregoing reasons, the undersigned representative respectfully requests reversal of the rejection of claims 1, 4, 5, 8, 10, 15-17, 22, 27, 33, 39, 42-50, 55-58, 63, 69, 71, 73-74, and 79-81.

The Combination of Fox, Jachimowicz, Claus, and Pitrodata to Reject Claim 13

Is Improper

As previously noted, the Examiner has failed to establish the required *prima facie* case of unpatentability for independent claim 1 and similarly has failed to establish a *prima facie* case of unpatentability for claim 13 that depends on claim and which recite further specific elements that have no reasonable correspondence with the references.

For example, claim 13 depending on claim 1 further proposes initiating the contactless bi-directional communication interface between the smart card application and a PC via the hand-held computing device.

The Examiner considers that all of the further specific elements recited in claim 13 are disclosed in Fox, Jachimowicz, Claus, and Pitroda. Likewise, neither Fox which teaches a cell phone with smart card circuitry, Jachimowicz which teaches a smart card with internally disposed optical communications components, Claus which teaches a smart card reader network, nor Pitroda which teaches a smart card that can transfer data to a PC or mainframe computer recite the required combination of

limitations proposing establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

This combination of references does not recite or render obvious each and every limitation of claims 13. See In re Royka, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a *prima facie* case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

For at least the foregoing reasons, the undersigned representative respectfully requests reversal of the rejection of claim 13.

The Combination of Fox, Claus, and Saitoh to Reject Claim 66 Is Improper

As already noted, the Examiner has failed to establish the required *prima facie* case of unpatentability for independent claim 63 and similarly has failed to establish a *prima facie* case of unpatentability for claim 66 that depends on claim 63 and which recite further specific elements that have no reasonable correspondence with the references.

Claim 66 depending on claim 63 further proposes establishing the physical contact bi-directional communication interface with the smart card to access the application on the smart card microcomputer via a radio frequency interface communication device.

The Examiner considers that Fox, Claus, and Saitoh disclose all of the further specific elements recited in claim 66. On the contrary, neither Fox which discusses a cell phone with smart card circuitry, Claus which discusses a smart card reader network, nor Saitoh which discusses a smart card for use with a smart card reader with or without contacts recite the required combination of limitations proposing establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between

the smart card application and an on-line system according to Applicant's claimed invention.

Likewise, this combination of references does not recite or render obvious each and every limitation of claim 66. See In re Royka, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a prima facie case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

For at least the foregoing reasons, the undersigned representative respectfully requests reversal of the rejection of claim 66.

The Combination of Fox, Jachimowicz, and Claus to Reject Claims 2-3, 11-12, 14, and 64-65 Is Improper

As previously noted, the Examiner has failed to establish the required *prima facie* case of unpatentability for independent claims 1 and 63 and similarly has failed to establish a *prima facie* case of unpatentability for claims 2-3, 11-12, and 14 that depend on claim 1 and claims 64-65 that depend on claim 53 and which recite further specific elements that have no reasonable correspondence with the references.

For example, claims 2, 3, and 11 depending on claim 1 and claims 64 and 65 depending on claim 63 propose further that the contactless bi-directional communication interface is an infrared or wireless communication interface using an infrared or wireless communication device, such as an infrared transceiver, of the self-service terminal.

The Examiner considers that all of the further specific elements recited in claims 2, 3, 11, 64 and 65 are disclosed in Fox, Jachimowicz, and/or Claus. On the contrary neither Fox which teaches a cell phone with smart card circuitry, Jachimowicz which teaches a smart card with internally disposed optical communications components, nor Claus which teaches a smart card reader network recite the required combination of limitations proposing establishing a physical

contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

For another example, claims 12 and 14 depending on claim 1 propose further that the contactless bi-directional communication interface is initiated between the smart card application and a self-service transaction terminal, such as an ATM or telephone, via the hand-held computing device.

The Examiner considers that all of the further specific elements recited in claims 12 and 14 are disclosed in Fox. Likewise, Fox which teaches a cell phone with smart card circuitry does not recite the required combination of limitations proposing establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

This combination of references does not recite or render obvious each and every limitation of claims 2-3, 11-12, 14, and 64-65. See *In re Royka*, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a *prima facie* case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

For at least the foregoing reasons, the undersigned representative respectfully requests reversal of the rejection of claims 2-3, 11-12, 14, and 64-65.

The Combination of Fox, Claus, and Pitroda to Reject Claims 70 and 72 Is Improper

As previously noted, the Examiner has failed to establish the required *prima facie* case of unpatentability for independent claim 63 and similarly has failed to establish a *prima facie* case of unpatentability for claims 70 and 72 that depend on claim 63 and which recite further specific elements that have no reasonable correspondence with the references.

For example, claim 70 and 72 depending on claim 63 further propose further that the self-service transaction terminal is a personal computer and that the hand-held device is a bank host on-line system.

The Examiner considers that all of the further specific elements recited in claims 70 and 72 are disclosed in Fox, Claus, and Pitroda. Neither Fox which teaches a cell phone with smart card circuitry, Claus which teaches a smart card reader network, nor Pitroda which teaches a smart card that can transfer data to a PC or mainframe computer recite the required combination of limitations proposing establishing a physical contact communication between a smart card and a device to access a smart card application and initiating a contactless communication between the smart card application and an on-line system according to Applicant's claimed invention.

Likewise, this combination of references does not recite or render obvious each and every limitation of claims 70 and 72. See *In re Royka*, 490 F.2d 981, 985 (C.C.P.A., 1974) (holding that a prima facie case of obviousness requires the references to teach all of the limitations of the rejected claim); See also MPEP §2143.03.

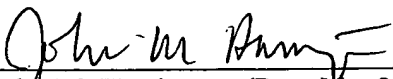
For at least the foregoing reasons, the undersigned representative respectfully requests reversal of the rejection of claims 70 and 72.

(9) Conclusion

For at least the reasons given above, the rejections of claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 are improper. The undersigned representative respectfully requests the final rejection by the Examiner be reversed and claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 be allowed. Attached below is an Appendix of claims 1-5, 8, 10-17, 22, 27, 33, 39, 42-50, 55-58, 63-66, 69-74, and 79-81 for ease of reference.

Respectfully submitted,

Date: 10/14/03



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APPENDIX OF CLAIMS

1. A method of contactless interfacing for a smart card, comprising:

allowing a user to establish a physical contact bi-directional communication interface between a smart card and a hand-held computing device for accessing a smart card application on a microcomputer of the smart card;

allowing the user to enter identifying information and transaction information on the hand-held computing device;

allowing the user to initiate a contactless bi-directional communication interface via the hand-held computing device between the smart card application and a self-service transaction terminal of an on-line system of a financial institution;

verifying the smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

communicating the transaction information entered by the user on the hand-held computing device to the self-service transaction terminal of the on-line system via the contactless communication interface.

2. The method of claim 1, wherein the contactless communication interface further comprises an infrared communication interface.

3. The method of claim 1, wherein the contactless communication interface further comprises a wireless communication interface.

4. The method of claim 3, wherein the wireless communication interface further comprises a radio frequency communication interface.

5. The method of claim 4, wherein the radio frequency communication interface further comprises a proximity communication interface.
8. The method of claim 1, wherein the financial institution further comprises a bank.
10. The method of claim 1, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a contactless communication transceiver of the terminal.
11. The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through an infrared transceiver of the terminal.
12. The method of claim 1, wherein the self-service transaction terminal further comprises an automated teller machine.
13. The method of claim 1, wherein the self-service transaction terminal further comprises a personal computer.
14. The method of claim 1, wherein the self-service transaction terminal further comprises a telephone.
15. The method of claim 1, wherein the self-service transaction terminal further comprises a wireless telephone.
16. The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a wireless transceiver of the terminal.

17. The method of claim 16, wherein the wireless transceiver further comprises a radio frequency transceiver of the terminal.

22. The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a proximity transceiver of the terminal.

27. The method of claim 10, wherein allowing the user to initiate the contactless communication further comprises allowing the user to initiate the contactless communication between the contactless communication transceiver of the self-service transaction terminal and a contactless communication transceiver of the hand-held computing device comprising a personal data assistant.

33. The method of claim 27, wherein the personal data assistant further comprises an electronic purse or wallet.

39. The method of claim 1, wherein verifying the smart card further comprises verifying the smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device comprising a personal data assistant and the self-service transaction terminal.

42. The method of claim 1, wherein verifying the smart card further comprises verifying the authenticity of the smart card.

43. The method of claim 1, wherein verifying the smart card further comprises checking security information for the user.

44. The method of claim 43, wherein checking security information further comprises receiving security information for the user.

45. The method of claim 44, wherein receiving security information further comprises receiving a PIN number for the user.

46. The method of claim 44, wherein receiving security information further comprises receiving biometric information for the user.

47. The method of claim 44, wherein receiving security information further comprises receiving the security information on an input/output device.

48. The method of claim 47, wherein receiving the security information further comprises receiving the security information through an input/output device of the hand-held computing device comprising a personal data assistant.

49. The method of claim 48, wherein the personal data assistant comprises an electronic purse or wallet.

50. The method of claim 47, wherein receiving the security information further comprises receiving the information through the input/output device of a terminal.

55. The method of claim 1, wherein allowing the user to enter the transaction information further comprises receiving the information through an input/output device.

56. The method of claim 55, wherein receiving the information further comprises receiving the information through the input/output device of the hand-held computing device comprising a personal data assistant.

57. The method of claim 56, wherein the personal data assistant comprises an electronic purse or wallet.

58. The method of claim 55, wherein receiving the information further comprises receiving the information through the input/output device of a terminal.

63. A contactless interface system for a smart card, comprising:

a self-service transaction terminal of an on-line system of a financial institution;

a hand-held computing device capable of establishing a physical contact bi-directional communication interface with the smart card for accessing a smart card application on a microcomputer of the smart card;

wherein the hand-held computing device has an input device for receiving identifying information and transaction information entered by a user;

wherein the hand-held computing device is capable of initiating a contactless bi-directional communication interface between the smart card application and the self-service transaction terminal of the on-line system via the hand-held computing device;

wherein the on-line system is capable of verifying the smart card via identification information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

wherein the hand-held computing device is capable of communicating the transaction information to the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal.

64. The system of claim 63, wherein the hand-held computing device further comprises an infrared interface communication device.

65. The system of claim 63, wherein the hand-held computing device further comprises a wireless interface communication device.

66. The system of claim 63, wherein the hand-held computing device further comprises a radio frequency interface communication device.

69. The system of claim 63, wherein the self-service transaction terminal comprises an automated teller machine.

70. The system of claim 63, wherein the self-service transaction terminal comprises a personal computer.

71. The system of claim 63, wherein the self-service transaction terminal comprises a telephone.

72. The system of claim 63, wherein the on-line system comprises a bank host on-line system.

73. The system of claim 63, wherein the hand-held computing device comprises a personal data assistant.

74. The system of claim 73, wherein the personal data assistant comprises an electronic purse or wallet.

79. The method of claim 1, wherein the accessing of the smart card application comprises executing the smart card application.

80. The method of claim 1, wherein the accessing of the smart card application comprises loading the smart card application.

81. The method of claim 80, further comprising iteratively performing:

the initiating of a contactless communication;

the verifying authorization; and

the communicating information.

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